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| 09/995,235 | 11/26/2001 | Helena O'Shea | 010403 | 9661 |

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| EXAMINER | |
|---|---|
| NGUYEN, TOAN D | |
| ART UNIT | PAPER NUMBER |
| 2616 | |

DATE MAILED: 08/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/995,235 | O'SHEA, HELENA | |
| | Examiner | Art Unit | |
| | Toan D. Nguyen | 2616 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *08 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *22-31* is/are allowed.

6)☒ Claim(s) *1-21 and 32-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 November 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-21, 32-42, 44, and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muller (US 6,845,238) in view of Jetzek et al. (US 6,546,252) and further in view of Shohara (US 6,463,266).

For claims 1-2, 6, and 7, Muller discloses inter-frequency measurement and handover for wireless communications, comprising:

obtaining frequency estimation information from a first wireless signal received from a first carrier in a first communication system (reference UTRAN system)(figure 10, reference step 10-6, col. 23 lines 16-17);

performing a handover to a second carrier in a second communication system (reference GSM system) distinct from the first communication system (reference UTRAN system)(figure 10, reference step 10-7, col. 23 lines 33-34).

However, Muller does not expressly disclose configuring for receiving a second wireless signal from the second carrier as a function of the frequency information. In an analogous art, Jetzek et al. disclose configuring for receiving a second wireless signal from the second carrier as a function of the frequency information (col. 6 lines 24-31).

Jetzek et al. disclose wherein the frequency estimation information comprises a frequency offset (col. 6 lines 24-31 as set forth in claim 2).

One skilled in the art would have recognized the configuring for receiving a second wireless signal from the second carrier as a function of the frequency information, and would have applied Jetzek et al.'s interfrequency handover in Muller's handover from a UTRAN system to a GSM system. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Jetzek et al.'s system and method for estimating intefrequency measurements used for radio network function in Muller's inter-frequency measurement and handover for wireless communications with the motivation being to provide the frequency estimation by providing the offset frequency (col. 6 lines 28-37).

Furthermore, Muller in view of Jetzek et al. does not expressly disclose a frequency tracking loop. In an analogous art, Shohara discloses a frequency tracking loop (figure 1, reference 100, col. 9 line 6).

Shohara discloses wherein the frequency tracking loop configures a voltage-controlled, temperature-compensated oscillator as a function of the frequency estimation information (col. 8 line 57-58 as set forth in claim 6), and wherein the frequency tracking loop configures a rotator as a function of the frequency estimation information (col. 9 line 4 as set forth in claim 7).

One skilled in the art would have recognized the frequency tracking loop, and would have applied Shohara's automatic frequency control 100 in Muller's handover from a UTRAN system to a GSM system. Therefore, it would have been obvious to one of

ordinary skill in the art at the time of the invention, to use Shohora's radio frequency control for communications system in Muller's inter-frequency measurement and handover for wireless communications with the motivation being to produce a sequence of frequency offset commands for the downlink and uplink phase rotators in a Typ 2 AFC tracking loop configuration (figure 5, col. 16 lines 39-42).

For claim 3, Muller discloses wherein the first wireless signal is a CDMA signal and the second wireless signal is a GSM signal (figure 3D, col. 19 line 65).

For claim 4, Muller discloses wherein the CDMA signal is one of a W-CDMA signal and a CDMA2000 signal (figure 3B, col. 20 lines 8-10).

For claim 5, Muller discloses wherein the first wireless signal is a GSM signal and the second wireless signal is a CDMA (figure 11, col. 21 line 22).

For claim 8, Muller discloses obtaining handover information during an allocated time slot (figure 9, col. 19 lines 23-27).

For claim 9, Muller discloses wherein the handover information comprises at least one of received signal code power (RSCP), signal-to-interference ration (SIR), and a received signal strength indicator (RSSI)(col. 20 line 30).

For claim 10, Muller discloses wherein the allocated time slot occurs during a compressed mode (col. 19 line 23).

For claims 11, 12, 17, and 18, Muller discloses inter-frequency measurement and handover for wireless communications, comprising:

obtaining frequency estimation information from a first wireless signal received from a first carrier in a first communication system (reference UTRAN system)(figure 10, reference step 10-6, col. 23 lines 16-17);

performing a handover to a second carrier in a second communication system (reference GSM system) distinct from the first communication system (reference UTRAN system)(figure 10, reference step 10-7, col. 23 lines 33-34).

However, Muller does not expressly disclose configuring for receiving a second wireless signal from the second carrier as a function of the frequency information. In an analogous art, Jetzek et al. disclose configuring for receiving a second wireless signal from the second carrier as a function of the frequency information (col. 6 lines 24-31).

Jetzek et al. disclose wherein the frequency estimation information comprises a frequency offset (col. 6 lines 24-31 as set forth in claim 12).

One skilled in the art would have recognized the configuring for receiving a second wireless signal from the second carrier as a function of the frequency information, and would have applied Jetzek et al.'s interfrequency handover in Muller's handover from a UTRAN system to a GSM system. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Jetzek et al.'s system and method for estimating intefrequency measurements used for radio network function in Muller's inter-frequency measurement and handover for wireless communications with the motivation being to provide the frequency estimation by providing the offset frequency (col. 6 lines 28-37).

Furthermore, Muller in view of Jetzek et al. does not expressly disclose a frequency tracking loop. In an analogous art, Shohara discloses a frequency tracking loop (figure 1, reference 100, col. 9 line 6).

Shohara discloses wherein the frequency tracking loop configures a voltage-controlled, temperature-compensated oscillator as a function of the frequency estimation information (col. 8 line 57-58 as set forth in claim 17), and wherein the frequency tracking loop configures a rotator as a function of the frequency estimation information (col. 9 line 4 as set forth in claim 18).

One skilled in the art would have recognized the frequency tracking loop, and would have applied Shohara's automatic frequency control 100 in Muller's handover from a UTRAN system to a GSM system. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Shohora's radio frequency control for communications system in Muller's inter-frequency measurement and handover for wireless communications with the motivation being to produce a sequence of frequency offset commands for the downlink and uplink phase rotators in a Typ 2 AFC tracking loop configuration (figure 5, col. 16 lines 39-42).

For claim 13, Muller discloses wherein the first wireless signal is a CDMA signal (figure 3D, col. 19 line 65).

For claim 14, Muller discloses wherein the CDMA signal is one of a W-CDMA signal and a CDMA2000 signal (figure 3B, col. 20 lines 8-10).

For claim 15, Muller discloses wherein the second wireless signal is a GSM signal (figure 3D, col. 19 line 65).

For claim 16, Muller discloses wherein the first wireless signal is a GSM signal and the second wireless signal is a CDMA (figure 11, col. 21 line 22).

For claim 19, Muller discloses obtaining handover information during an allocated time slot (figure 9, col. 19 lines 23-27).

For claim 20, Muller discloses wherein the handover information comprises at least one of received signal code power (RSCP), signal-to-interference ration (SIR), and a received signal strength indicator (RSSI)(col. 20 line 30).

For claim 21, Muller discloses wherein the allocated time slot occurs during a compressed mode (col. 19 line 23).

For claims 32, 33, 37, and 38, Muller discloses inter-frequency measurement and handover for wireless communications, comprising:

means for obtaining frequency estimation information from a first wireless signal received from a first carrier in a first communication system (reference UTRAN system)(figure 10, reference step 10-6, col. 23 lines 16-17);

means for performing a handover to a second carrier in a second communication system (reference GSM system) distinct from the first communication system (reference UTRAN system)(figure 10, reference step 10-7, col. 23 lines 33-34).

However, Muller does not expressly disclose means for configuring for receiving a second wireless signal from the second carrier as a function of the frequency information. In an analogous art, Jetzek et al. disclose means for configuring for receiving a second wireless signal from the second carrier as a function of the frequency information (col. 6 lines 24-31).

Jetzek et al. disclose wherein the frequency estimation information comprises a frequency offset (col. 6 lines 24-31 as set forth in claim 33).

One skilled in the art would have recognized the means for configuring for receiving a second wireless signal from the second carrier as a function of the frequency information, and would have applied Jetzek et al.'s interfrequency handover in Muller's handover from a UTRAN system to a GSM system. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Jetzek et al.'s system and method for estimating intefrequency measurements used for radio network function in Muller's inter-frequency measurement and handover for wireless communications with the motivation being to provide the frequency estimation by providing the offset frequency (col. 6 lines 28-37).

Furthermore, Muller in view of Jetzek et al. does not expressly disclose a frequency tracking loop. In an analogous art, Shohara discloses a frequency tracking loop (figure 1, reference 100, col. 9 line 6).

Shohara discloses wherein the frequency tracking loop configures a voltage-controlled, temperature-compensated oscillator as a function of the frequency estimation information (col. 8 line 57-58 as set forth in claim 37), and wherein the frequency tracking loop configures a rotator as a function of the frequency estimation information (col. 9 line 4 as set forth in claim 38).

One skilled in the art would have recognized the frequency tracking loop, and would have applied Shohara's automatic frequency control 100 in Muller's handover from a UTRAN system to a GSM system. Therefore, it would have been obvious to one of

ordinary skill in the art at the time of the invention, to use Shohora's radio frequency control for communications system in Muller's inter-frequency measurement and handover for wireless communications with the motivation being to produce a sequence of frequency offset commands for the downlink and uplink phase rotators in a Typ 2 AFC tracking loop configuration (figure 5, col. 16 lines 39-42).

For claim 34, Muller discloses wherein the first wireless signal is a CDMA signal and the second wireless signal is a GSM signal (figure 3D, col. 19 line 65).

For claim 35, Muller discloses wherein the CDMA signal is one of a W-CDMA signal and a CDMA2000 signal (figure 3B, col. 20 lines 8-10).

For claim 36, Muller discloses wherein the first wireless signal is a GSM signal and the second wireless signal is a CDMA (figure 11, col. 21 line 22).

For claim 39, Muller discloses obtaining handover information during an allocated time slot (figure 9, col. 19 lines 23-27).

For claim 40, Muller discloses wherein the handover information comprises at least one of received signal code power (RSCP), signal-to-interference ration (SIR), and a received signal strength indicator (RSSI)(col. 20 line 30).

For claim 41, Muller discloses wherein the allocated time slot occurs during a compressed mode (col. 19 line 23).

For claims 42, 44, and 45, Muller discloses inter-frequency measurement and handover for wireless communications, comprising:

determining a frequency error of a first wireless signal operating at a carrier frequency (reference UTRAN system)(figure 10, reference step 10-6, col. 23 lines 16-17); and

performing a handover to a second carrier (reference GSM system) (figure 10, reference step 10-7, col. 23 lines 33-34).

However, Muller does not expressly disclose configuring for receiving a second wireless signal operating at a second carrier based at least in part on the frequency error of the first wireless signals. In an analogous art, Jetzek et al. disclose configuring for receiving a second wireless signal operating at a second carrier based at least in part on the frequency error of the first wireless signals (col. 6 lines 24-31).

Jetzek et al. disclose wherein determining the frequency error comprises determining a frequency offset of a carrier frequency of the first wireless signal relative to a desired carrier frequency (col. 6 lines 28-37 as set forth in claim 44), and determining a ratio of a desired carrier frequency to a carrier frequency of the first wireless signal relative; and applying a frequency correction to the frequency tracking loop based on the ratio (col. 6 lines 24-37 as set forth in claim 45).

One skilled in the art would have recognized the configuring for receiving a second wireless signal operating at a second carrier based at least in part on the frequency error of the first wireless signals, and would have applied Jetzek et al.'s interfrequency handover in Muller's handover from a UTRAN system to a GSM system. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Jetzek et al.'s system and method for estimating intefrequency measurements used for radio network function in Muller's inter-frequency measurement and handover for wireless communications with the motivation being to provide the frequency estimation by providing the offset frequency (col. 6 lines 28-37).

Furthermore, Muller in view of Jetzek et al. does not expressly disclose a frequency tracking loop. In an analogous art, Shohara discloses a frequency tracking loop (figure 1, reference 100, col. 9 line 6).

One skilled in the art would have recognized the frequency tracking loop, and would have applied Shohara's automatic frequency control 100 in Muller's handover from a UTRAN system to a GSM system. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Shohora's radio frequency control for communications system in Muller's inter-frequency measurement and handover for wireless communications with the motivation being to produce a sequence of frequency offset commands for the downlink and uplink phase rotators in a Type 2 AFC tracking loop configuration (figure 5, col. 16 lines 39-42).

3. Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Muller (US 6,845,238) in view of Jetzek et al. (US 6,546,252) and Shohara (US 6,463,266) further in view of Vihriala (US 6,956,895).

For claim 43, Muller in view of Jetzek et al. and Shohara does not expressly disclose wherein determining the frequency error comprises averaging a frequency offset from a plurality of fingers of a RAKE receiver. In an analogous art, Vihriala discloses wherein determining the frequency error comprises averaging a frequency offset from a plurality of fingers of a RAKE receiver (col. 4 lines 20-21).

One skilled in the art would have recognized the averaging a frequency offset from a plurality of fingers of a RAKE receiver, and would have applied Vihriala's rake receiver in Muller's handover from a UTRAN system to a GSM system. Therefore, it would have

been obvious to one of ordinary skill in the art at the time of the invention, to use Vihriala's method and arrangement for reducing frequency offset in a radio receiver in Muller's inter-frequency measurement and handover for wireless communications with the motivation being to provide the frequency error estimates of all fingers can be averaged (col. 4 line 21).

***Allowable Subject Matter***

4. Claims 22-31 are allowed.

Regarding claim 22, the prior art fails to teach a combination of the steps of:

a second receiver to receive a second signal from a second carrier, the second receiver comprising a second frequency tracking loop to obtain frequency estimation information relating to the second signal as a function of the frequency estimation information relating to the first signal, in the specific combination as recited in the claim.

***Response to Arguments***

5. Applicant's arguments with respect to claims 1-45 have been considered but are moot in view of the new ground(s) of rejection.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toan D. Nguyen whose telephone number is 571-272-3153. The examiner can normally be reached on M-F (7:00AM-4:30PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Huy Vu can be reached on 571-272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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